

Application Serial No. 10/018,718
Reply to Office Action of March 24, 2005

PATENT
Docket: CU-2727

REMARKS

In the Office Action, dated March 24, 2005, the Examiner states that Claims 1, 3-6, 12-14, 16, 18, 20 and 22-29 are pending, Claims 1, 3-6, 12-14, 16, 18 and 20 are rejected and Claims 22-29 are withdrawn. By the present Amendment, Applicant amends the claims.

In the Office Action, Claims 5 and 6 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. Those claims have been amended to replace the term "transparent substrate" with "polymer electrolyte film --".

In the Office Action, Claims 1, 3-6, 12, 14, 16, 18 and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over US 6,210,787 (Goto et al.) in view of US 5,976,680 (Ikemori et al.) and US 5,880,557 (Endo et al.).

Claim 1 of the present application has been amended to indicate that "wherein a surface of the transparent substrate and the fine particles are allowed to adhere to each other by at least an electrostatic interaction, which is achieved, through the polymer electrolyte film, by using fine particles having a polarity different from the polarity: anion or cation, that the polymer electrolyte film has."

The present invention as claimed is peculiar in allowing the fine particles to adhere through the electrostatic interaction which is caused by using the polymer electrolyte film. Thus, as described from line 19 on page 32 to line 6 on page 33 of the specification, the present invention enables to increase the charge density to form a fine particle layer with fine particles uniformly adhering thereto, thereby forming an antireflection film having a high antireflection effect.

Furthermore, as described on page 33, lines 7 to 18 of the specification, the polymer electrolyte film comprises both of the polarities: anionic property and cationic property. Thus, the charge of the adhering fine particle surface is not limited to either anion or cation. Therefore, the present invention is advantageous in being able to greatly expand the width of selections for usable fine particles.

The prior art does not disclose selecting the polymer electrolyte film as a means to adhere the fine particles to the transparent substrate by the electrostatic interaction. In other words, the prior art does not disclose having the fine particle layer comprising the polymer electrolyte film and the fine particles adhered thereto by the electrostatic interaction.

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Goto et al. discloses an antireflection film comprising a transparent substrate and a conductive layer formed on the transparent substrate. Ikemori et al. discloses polyacrylic acid and polymethacrylic acid as polyacrylic acids which coexist in polycondensation of an inorganic alkoxide used in an antireflection film. Endo et al. discloses that the fine particles are used as an antireflection film. None of these cited references discloses, to "have the fine particle layer comprising the polymer electrolyte film and the fine particles adhered thereto by the electrostatic interaction," as mentioned above.

Although Endo et al. indeed discloses the fine particles, and Ikemori et al. does disclose polyacrylic acid and polymethacrylic acid which correspond to the polymer electrolyte of the present invention, the present invention as claimed achieves its unique operation effect by combining the fine particles and the polymer electrolyte. The present invention as claimed cannot be regarded as obvious from the mere fact that fine particles and polymer electrolyte are disclosed respectively in each of the cited references. Ikemori et al., discloses simply that polyacrylic acid and polymethacrylic acid as polyacrylic acids which coexist in polycondensation of an inorganic alkoxide used in an antireflection film. This simple disclosure cannot be said as disclosing the solid electrolyte film. Even if such co-existing inorganics are regarded as a solid electrolyte film, the solid electrolyte film disclosed in Ikemori et al. comprises only the anionic polymer, and does not disclose the solid electrolyte film which comprises both of the polarities: anionic property and cationic property, as disclosed and claimed in the present invention.

Therefore, the present invention described in an amended Claim 1, and each of the claims dependent thereon, is not considered obvious from any of the disclosures of Goto et al., Ikemori et al., Endo et al., or the combination of these.

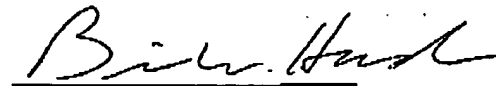
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In light of the foregoing response, all the outstanding objections and rejections are considered overcome. Applicant respectfully submits that this application should now be in condition for allowance and respectfully requests favorable consideration.

Respectfully submitted,

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Date



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